Amendments to the Claims:

This listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims:

Claim 1 (currently amended): A high phase order rotating induction machine, ~~wherein the number of phases is greater than three,~~ comprising a stator having windings for each of said phases, the number of phases is greater than three, a number of inductors is a function of desired cutoff frequency and slot position, ~~wherein~~ said windings are distributed according to a sinc function or an approximation of a sinc function:

$$\text{sinc} = \sin(f^*x) / (f^*x)$$

where sinc is the cutoff harmonic, and f is the cutoff frequency, normalized so that at a cut of frequency of 1, the first zero of the sinc function will be 90*N electrical degrees from peak of the sinc function, where N is any integer between negative infinity and positive infinity, such that a suitable winding distribution is formed centered around a zero degree reference slot.

Claim 2 (previously amended): The rotating induction machine of claim 1 wherein said windings are distributed according to an approximation of a sinc function.

Claim 3 (previously amended): The rotating induction machine of claim 2 wherein said sinc function has a cutoff frequency at a fourth or a fifth harmonic.

Claim 4 (previously amended): The rotating induction machine of claim 2 wherein the number of phases is five and wherein said sinc function has a cutoff frequency at a third spatial harmonic.

Claim 5 (previously amended): The rotating induction machine of claim 4 further comprising a high phase inverter drive, wherein the number of phases is the same as the number of phases of said rotating induction machine, electrically connected to said windings, wherein said windings are connected to said inverter drive with a mesh connection.

Claim 6 (previously amended): The rotating induction machine of claim 5 wherein said inverter drive is capable of selectively injecting third harmonic into a drive waveform, and wherein said mesh connection has a span of L=2.

Claim 7 (currently amended): A high phase order rotating induction machine, ~~wherein the number of phases is greater than three,~~ comprising a stator having windings for each of said phases, the number of phases is greater than three, ~~wherein~~ said windings are distributed according to a cyclic sinc function or an approximation of a cyclic sinc function:

$$\text{cyclic sinc}(S) = \sum_{n=-\infty}^{+\infty} \{\text{sinc}(C(S+2\pi n)) - \text{sinc}(C(S+2\pi n) - \pi)\}$$

where C is the cutoff harmonic, S is the slot angle in radians, from the reference zero of the phase, and n is an integer between from negative infinity and positive infinity, such that a suitable winding distribution is formed centered around a zero degree reference slot.

Claim 8 (previously amended): The rotating induction machine of claim 7 wherein said windings are distributed according to an approximation of a cyclic sinc function.

Claim 9 (previously amended): The rotating induction machine of claim 8 wherein said cyclic function has a cutoff frequency to pass low-order harmonics and to substantially filter out all higher harmonics.

Claim 10 (previously amended): The rotating induction machine of claim 8 wherein said windings are distributed to give a fixed number of turns positioned in the center of each lobe of the cyclic sinc function.

Claim 11 (previously amended): The rotating induction machine of claim 10 wherein said cyclic function has a cutoff frequency to pass low order harmonics and to substantially filter out high-order harmonics.

Claim 12 (original): The rotating induction machine of claim 8 additionally comprising groups of windings

positioned in a single lobe on either side of said central lobe.

Claims 13 (cancelled).

Claim 14 (previously amended): The rotating induction machine of claim 8 wherein said cyclic sinc function has a cutoff frequency at the fourth or the fifth harmonic.

Claim 15 (previously amended): The rotating induction machine of claim 8 wherein the number of phases is five and wherein said sinc function has a cutoff frequency at a third spatial harmonic.

Claim 16 (previously amended): The rotating induction machine of claim 15 further comprising a high phase inverter drive, wherein the number of phases is the same as the number of phases of said rotating induction machine, electrically connected to said windings, wherein said windings are connected to said inverter drive with a mesh connection.

Claim 17 (previously amended): The rotating induction machine of claim 16 wherein said mesh connection has a span of L=2.

Claim 18 (previously amended): The rotating induction machine of claim 8 further comprising a high phase inverter drive, wherein the number of phases is the same as the number of phases of said rotating induction machine, electrically connected to said windings, wherein said windings are connected to said inverter drive with a mesh connection and wherein said inverter drive is capable of selectively injecting low order harmonics into a drive waveform.

Claim 19 (previously amended): The rotating induction machine of claim 18 wherein said cyclic sinc function has a cutoff frequency to pass said low order harmonics only.

Claim 20 (original): The rotating induction machine of claim 8 wherein said windings are distributed for each phase to approximate only the broad central regions of the cyclic sinc function, ignoring the side lobes of the cyclic sinc function.

Claim 21 (original): The rotating induction machine of claim 20 wherein within said broad central region said windings are distributed to approximate a sine function.

Claim 22 (original): The rotating induction machine of claim 20 wherein within said broad central region said windings are distributed to approximate the cyclic sinc function with a gradient of increasing number of turns up to a maximum value.

Claim 23 (cancelled).